

Petrochemical Manufacturing: 2002

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2002 Economic Census

Manufacturing

Industry Series



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U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU



Table 1. Historical Statistics for the Industry: 2002 and Earlier Years

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year ¹	Com- panies ²	All estab- lish- ments ³	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)
			Number ⁴	Payroll (\$1,000)	Number ⁴	Hours (1,000)	Wages (\$1,000)				
325110, Petrochemical manufacturing 2002..	40	55	9 177	644 648	4 880	10 022	335 458	5 618 643	14 668 531	20 326 446	577 909
2001..	N	N	7 712	510 345	4 284	10 047	247 846	2 501 339	13 672 958	16 219 087	410 585
2000..	N	N	9 657	600 988	5 332	12 011	363 390	6 355 444	16 661 082	22 907 254	466 272
1999..	N	N	11 762	718 135	6 480	14 895	408 655	7 964 337	11 340 181	19 554 160	526 205
1998..	N	N	10 377	646 692	5 813	13 075	337 122	3 904 694	9 118 828	13 031 931	628 865
1997..	42	52	10 192	620 132	5 741	12 869	326 988	8 359 545	11 192 888	19 468 615	988 915

¹Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during the year.

⁴Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 2. Industry Statistics for Selected States: 2002

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments ²		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
325110, Petrochemical manufacturing												
United States.....	—	55	32	9 177	644 648	4 880	10 022	335 458	5 618 643	14 668 531	20 326 446	577 909
Louisiana	—	7	6	2 353	160 371	965	2 083	58 278	1 409 175	4 473 166	5 903 810	163 121
Texas	—	22	18	5 197	369 535	3 013	6 103	216 180	3 872 855	8 534 863	12 424 877	282 084

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 3. Detailed Statistics by Industry: 2002

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
325110, Petrochemical manufacturing	
Companies ¹	number.. 40
All establishments ²	number.. 55
Establishments with 1 to 19 employees	number.. 23
Establishments with 20 to 99 employees	number.. 11
Establishments with 100 employees or more	number.. 21
All employees ³	number.. 9 177
Total compensation	\$1,000.. 829 645
Annual payroll	\$1,000.. 644 648
Total fringe benefits	\$1,000.. 184 997
Production workers, average for year	number.. 4 880
Production workers on March 12	number.. 4 820
Production workers on May 12	number.. 5 068
Production workers on August 12	number.. 4 846
Production workers on November 12	number.. 4 778
Production worker hours	1,000.. 10 022
Production worker wages	\$1,000.. 335 458
Total cost of materials	\$1,000.. 14 668 531
Materials, parts, containers, packaging, etc., used	\$1,000.. 10 879 914
Resales	\$1,000.. 1 850 338
Purchased fuels	\$1,000.. 1 531 813
Purchased electricity	\$1,000.. 222 371
Contract work	\$1,000.. 184 095
Quantity of electricity purchased for heat and power	1,000 kWh.. 6 378 174
Quantity of electricity generated less sold for heat and power	1,000 kWh.. 2 448 540
Total value of shipments	\$1,000.. 20 326 446
Primary products value of shipments	\$1,000.. 14 238 452
Secondary products value of shipments	\$1,000.. 4 211 491
Total miscellaneous receipts	\$1,000.. 1 876 503
Value of resales	\$1,000.. 1 862 456
Contract receipts	\$1,000.. D
Other miscellaneous receipts	\$1,000.. D
Primary products specialization ratio	percent.. 77
Value of primary products shipments made in all industries	\$1,000.. 17 334 452
Value of primary products shipments made in this industry	\$1,000.. 14 238 452
Value of primary products shipments made in other industries	\$1,000.. 3 096 000
Coverage ratio	percent.. 82
Value added	\$1,000.. 5 618 643
Total inventories, beginning of year	\$1,000.. 867 655
Finished goods inventories	\$1,000.. 395 870
Work-in-process inventories	\$1,000.. 85 728
Materials and supplies inventories	\$1,000.. 386 057
Total inventories, end of year	\$1,000.. 781 071
Finished goods inventories	\$1,000.. 361 609
Work-in-process inventories	\$1,000.. 80 717
Materials and supplies inventories	\$1,000.. 338 745
Gross value of depreciable assets (acquisition costs) at beginning of year	\$1,000.. 17 371 607
Total capital expenditures (new and used)	\$1,000.. 577 909
Buildings and other structures (new and used)	\$1,000.. 93 820
Machinery and equipment (new and used)	\$1,000.. 484 089
Automobiles, trucks, etc., for highway use	\$1,000.. 3 787
Computers and peripheral data processing equipment	\$1,000.. 12 100
All other expenditures for machinery and equipment	\$1,000.. 468 202
Total retirements	\$1,000.. 349 374
Gross value of depreciable assets at end of year	\$1,000.. 17 600 142
Depreciation charges during year	\$1,000.. 678 432
Total rental payments	\$1,000.. 67 819
Buildings and other structures	\$1,000.. 26 736
Machinery and equipment	\$1,000.. 41 083
Total other expenses ⁴	\$1,000.. 1 636 653
Response coverage ratio ⁵	percent.. 99
Repair and maintenance services of buildings and/or machinery ⁴	\$1,000.. 285 470
Communications services ⁴	\$1,000.. 2 416
Legal services ⁴	\$1,000.. 1 846
Accounting, auditing, and bookkeeping services ⁴	\$1,000.. 1 516
Advertising and promotional services ⁴	\$1,000.. D
Expensed computer hardware and supplies and purchased computer services ⁴	\$1,000.. 7 613
Refuse removal (including hazardous waste) services ⁴	\$1,000.. 33 707
Management consulting and administrative services ⁴	\$1,000.. 23 846
Taxes and license fees ⁴	\$1,000.. 102 221
All other expenses ⁴	\$1,000.. D

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Based on Annual Survey of Manufactures (ASM) sample data.

⁵A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 4. Industry Statistics by Employment Size: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E ¹	All establishments ²	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
325110, Petrochemical manufacturing											
All establishments	—	55	9 177	644 648	4 880	10 022	335 458	5 618 643	14 668 531	20 326 446	577 909
Establishments with—											
1 to 4 employees	9	11	24	1 166	16	29	739	7 335	22 757	30 060	2 616
5 to 9 employees	5	4	24	1 312	16	37	881	4 346	2 289	8 299	98
10 to 19 employees	5	8	103	6 553	65	138	4 098	8 266	27 358	36 041	7 619
20 to 49 employees	—	7	269	18 589	198	414	13 193	249 400	655 165	903 477	7 061
50 to 99 employees	—	4	220	15 126	140	294	9 926	283 188	420 578	707 838	12 486
100 to 249 employees	—	10	1 754	122 568	934	1 991	63 766	714 451	2 058 683	2 801 389	156 797
250 to 499 employees	—	7	2 483	175 060	1 422	2 940	99 804	1 006 489	3 480 768	4 500 661	197 201
500 to 999 employees	—	2	g	D	D	D	D	D	D	D	D
1,000 to 2,499 employees	—	2	h	D	D	D	D	D	D	D	D
2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—
Administrative records ⁴	9	9	36	2 211	22	46	1 297	8 323	23 249	31 535	5 957

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 5. Industry Statistics by Primary Product Class Specialization: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments ¹	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ²	Payroll (\$1,000)	Number ²	Hours (1,000)	Wages (\$1,000)				
325110	Petrochemical manufacturing	55	9 177	644 648	4 880	10 022	335 458	5 618 643	14 668 531	20 326 446	577 909
3251101	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants	23	2 884	201 355	1 664	3 521	117 371	1 117 135	3 867 307	5 012 739	284 628
3251104	Liquefied refinery gases (aliphatics), made in petrochemical plants	20	6 097	430 417	3 100	6 232	210 281	4 496 188	10 792 521	15 299 317	292 351

¹Includes establishments with payroll at any time during the year.

²Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. **Products Statistics: 2002 and 1997**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
325110	Petrochemical manufacturing	2002.. N 1997.. N	X X	X X	17 334 452 17 349 259
3251101	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants	2002.. N 1997.. N	X X	X X	6 806 629 4 526 855
32511011	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants	2002.. N 1997.. N	X X	X X	6 806 337 4 371 009
3251101111	Aromatics (benzene, toluene, xylene, etc.), for use as a chemical raw material, made in petrochemical plants	2002.. 22 1997.. 28	X X	X X	6 002 192 3 894 159
3251101121	Aromatics (benzene, toluene, xylene, etc.), for other uses, made in petrochemical plants	2002.. 15 1997.. 11	X X	X X	804 145 476 850
3251101Y	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants, nsk	2002.. N 1997.. N	X X	X X	292 155 846
3251101YWV	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants, nsk	2002.. N 1997.. N	X X	X X	292 155 846
3251104	Liquefied refinery gases (aliphatics), made in petrochemical plants	2002.. N 1997.. N	X X	X X	10 511 529 12 616 055
32511041	Liquefied refinery gases (aliphatics), made in petrochemical plants	2002.. N 1997.. N	X X	X X	10 511 529 12 518 721
3251104111	Liquefied refinery gases (aliphatics), for use as a chemical raw material, made in petrochemical plants	2002.. 19 1997.. 28	X X	X X	9 932 405 10 874 937
3251104121	Liquefied refinery gases (aliphatics), for other uses, made in petrochemical plants	2002.. 10 1997.. 9	X X	X X	579 124 1 643 784
3251104Y	Liquefied refinery gases (aliphatics), made in petrochemical plants, nsk	2002.. N 1997.. N	X X	X X	— 97 334
3251104YWV	Liquefied refinery gases (aliphatics), made in petrochemical plants, nsk	2002.. N 1997.. N	X X	X X	— 97 334
325110W	Petrochemical manufacturing nsk, total	2002.. N 1997.. N	X X	X X	16 294 206 349
325110WY	Petrochemical manufacturing nsk, total	2002.. N 1997.. N	X X	X X	16 294 206 349
325110WYWW	Petrochemical manufacturing nsk, for nonadministrative-record establishments	2002.. N 1997.. N	X X	X X	14 325 189 458
325110WYWY	Petrochemical manufacturing nsk, for administrative-record establishments	2002.. N 1997.. N	X X	X X	1 969 16 891

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. Product Class Shipments for Selected States: 2002 and 1997

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
3251101	Aromatics (benzene, toluene, xylene, etc.), made in petrochemical plants	
	United States 2002..	6 806 629
	..... 1997..	4 526 855
	Texas 2002..	4 130 177
	..... 1997..	1 959 597
3251104	Liquefied refinery gases (aliphatics), made in petrochemical plants	
	United States 2002..	10 511 529
	..... 1997..	12 616 055
	Louisiana 2002..	3 069 307
	..... 1997..	3 543 926
	Texas 2002..	7 395 261
	..... 1997..	8 832 514

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 7. Materials Consumed by Kind: 2002 and 1997

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
325110	Petrochemical manufacturing		
00900001	Total materials	X	10 879 914
32500002	Acids (including hydrochloric, hydrofluoric, nitric, and sulfuric), except spent acids 1,000 s tons	X	9 090 633
32531103	Nitrogenous fertilizers, ammonia, synthetic anhydrous (100 percent NH ₃) 1,000 s tons	D	D
	1997..	N	N
	2002..	D	D
	1997..	D	D
32518103	Chlorine (100 percent Cl basis) 1,000 s tons	D	D
32518107	Sodium hydroxide (caustic soda)(100 percent NaOH) 1,000 s tons	D	D
32500071	All other industrial inorganic chemicals	15.2	2 901
	2002..	165.8	27 318
	1997..	X	30 642
	1997..	X	38 784
32512001	Acetylene and other industrial gases (argon, carbon dioxide, nitrogen, etc.), compressed and liquified	X	25 500
32510067	Other alcohols (including amyl, butyl, methyl, and propyl)	X	35 933
32519213	Toluene and xylene (100 percent basis) mil lb	X	D
	2002..	X	D
	1997..	2 681.0	530 501
	1997..	1 340.1	145 825
32519205	Phenol (100 percent basis) mil lb	D	D
32519231	Orthoxylene and paraxylene (100 percent basis) mil lb	D	D
32411013	Benzol (benzene) (100 percent C ₆ H ₆) mil lb	D	D
	2002..	3 621.2	557 786
	1997..	S	480 890
32519233	Other cyclic crudes and intermediates mil lb	D	D
325100A5	All other miscellaneous synthetic organic chemicals	D	D
21111013	Natural gas used as a raw material bil cu ft	X	16 085
	2002..	X	100 179
	1997..	D	D
	1997..	282.4	157 787
32411031	Ethane used as a raw material or feedstock mil lb	9 743.3	868 293
32411033	Ethylene used as a raw material or feedstock mil lb	S	946 212
32411035	Propane used as a raw material or feedstock mil lb	D	D
	2002..	908.8	166 353
	1997..	P8 250.4	951 390
	1997..	S	614 222
32411037	Propylene used as a raw material or feedstock mil lb	D	D
32411039	Butane and isobutane used as a raw material or feedstock mil lb	S	695 111
32411041	Butylene and isobutylene used as a raw material or feedstock mil lb	P2 840.2	301 942
	2002..	P4 212.4	434 005
	1997..	D	D
	1997..	S	77 852
00190012	Other hydrocarbons used as raw materials or feedstocks	X	D
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	1 844 138
33300015	Parts and attachments for machinery and equipment	X	D
	2002..	D	D
	1997..	X	40 166
	1997..	X	48 196
33240000	Metal containers	X	737
00970099	All other materials and components, parts, containers, and supplies	X	D
00971000	Materials, ingredients, containers, and supplies, nsk	X	546 257
	2002..	X	1 867 940
	1997..	X	63 927
	1997..	X	403 969

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.